Viral Hepatitis in Indiana

Cheryl Pearcy
Hepatitis C Coordinator
Indiana State Department of Health

Brittany Mathers
Graduate Assistant
Ball State University

Hepatitis A

Hepatitis A is a viral infection transmitted most commonly by food or water contaminated with fecal material. Hepatitis A virus (HAV) can also be transmitted from person to person via fecal-oral contact. Hepatitis A is found primarily in humans.

An increase in vaccination against hepatitis A in travelers and children in high-risk communities has contributed to a decrease in the incidence of reported cases. Between 2001 and 2002, the number of reported acute clinical cases of hepatitis A in the United States dropped from 13,397 to 10,616. Hepatitis A vaccines used in the United States are safe, effective, and highly immunogenic. At least 97% of people have protective levels of antibody within one month of receiving the first dose of the vaccine and 100% have protective levels after the second dose. Vaccination is recommended for:

- people 2 years of age and older traveling to countries with high rates of hepatitis A,
- persons who live in communities that have prolonged outbreaks of hepatitis A or high rates of hepatitis A,
- men who have sex with men,
- persons who use street drugs,
- persons with chronic liver disease, and
- persons who receive clotting factor concentrates.

The recent outbreak of HAV infection associated with a Chi Chi's restaurant in western Pennsylvania underscores the importance of at-risk persons being vaccinated against this preventable disease. More than 500 cases have been reported resulting in 3 deaths.

Indiana does not have a high incidence state of hepatitis A, with generally fewer than 10 cases per 100,000 population each year. From 1998 to 2002, the numbers of reported cases for hepatitis A in Indiana were 156, 105, 132, 100 (provisional), and 50 (provisional) respectively. However, the number of cases for the first three quarters of 2003 already exceeds the 2002 reports. The most common at-risk groups reported in Indiana include contacts of confirmed cases, travelers to countries where hepatitis A is endemic, and men who have sex with men.

Increased hepatitis A vaccination is needed among high-risk demographic groups such as men who have sex with men and users of illegal drugs.

Hepatitis B

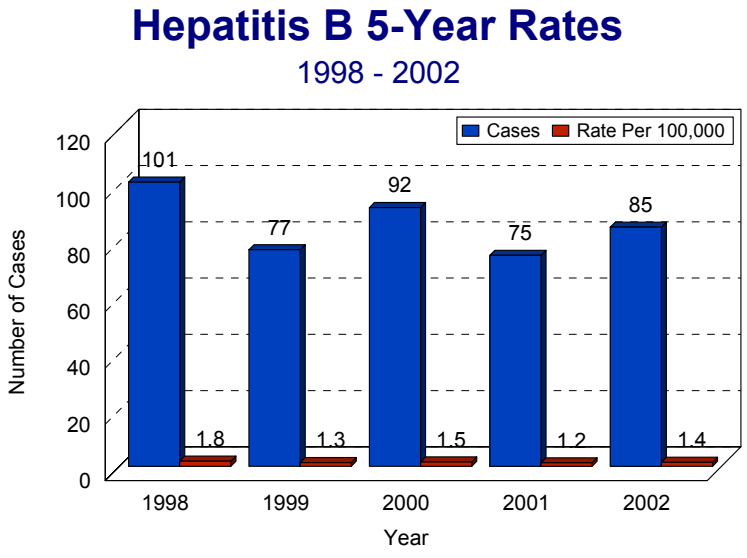
Hepatitis B virus (HBV) is a blood borne pathogen. Transmission occurs from direct contact with blood or body fluids that contain the virus. Each year there are approximately 600,000 HBV-related deaths worldwide, most of which are the result of chronic infection. In 1992 the World Health Organization (WHO) set a goal for all countries to integrate hepatitis B vaccination into routine childhood immunization. By May 2003, 151 of 192 WHO member states had achieved this goal. The primary objective of the hepatitis B vaccine is to prevent chronic HBV infection, which in turn will decrease the number of persons who are able to transmit the virus. The secondary objective is to prevent acute hepatitis B. The three dose vaccination process is 90-95% effective in achieving these objectives.

For the past three years the incidence of hepatitis B in the United States has been between 2.5-2.8 cases per 100,000 population annually. The number of acute clinical cases reported for 2000 and 2001 dropped from 8,036 to 7,844. Indiana is one of 47 states that include hepatitis B vaccination as part of the childhood vaccine series for school entry. Indiana law also requires reporting of acute hepatitis B infection in pregnant women and perinatally exposed infants. The highest rate of HBV infection in Indiana is found in adults between the ages of 50-59 followed by adults between the ages of 40-49. No cases under the age of 18 were reported in Indiana for 2002.

Three counties reported having more than five cases in 2002: Marion County, Lake County, and Vanderburgh County.

Figure 1 shows the 5-year trend for HBV infection in Indiana.

Figure 1.



Hepatitis C

Hepatitis C virus (HCV) is the most common chronic blood borne infection in the United States and the leading cause of liver transplants. Transmission of the virus occurs by direct blood-to-blood contact. A national survey (the third National Health and Nutrition Examination Survey [NHANES III]) of the

civilian, non-institutionalized U.S. population found that 1.8% of Americans (3.9 million) have been infected with HCV, of whom 2.7 million are chronically infected. This survey did not include institutionalized individuals, including prison inmates, or individuals in disaffected living conditions, such as the homeless; therefore, this estimate is probably conservative.

The leading risk factor for acquiring HCV is injection drug use (IDU), which accounts for 60 % of HCV infections. Blood transfusion recipients (acquired prior to the implementation of blood supply screening in 1992) account for 10% of the infections. Sexual transmission accounts for 15% of infections, although transmission is highest among individuals who have 50 or more lifetime partners. Transmission among monogamous couples is extremely low. Five percent is attributed to hemodialysis, health care workers, and mother to child transmission. The remaining 10% has unknown or not identifiable causes.

Since screening of the blood supply for HCV began in 1992, the rate of HCV transmission has dropped dramatically. In 2001 it was estimated that 25,000 new cases of HCV would occur in the United States. That is down from 41,000 new cases estimated in 1998. Indiana received 6,314 new reports of positive HCV tests in 2002 and 5,312 reports were received in 2001. However, the mandatory reporting law for laboratories to report positive HCV tests to the Indiana State Department of Health did not go into affect until October of 2002, therefore, it is too soon to determine any type of trend for this disease.

Hepatitis C surveillance in Indiana is conducted through mandatory laboratory reporting. Because these reports come from laboratories and not from physicians, demographic information such as the patient's race or county of residence is frequently lacking. Also lacking from this type of reporting is risk factor (how the disease is acquired) information. The omission of this type of data impedes the best direction of resources to curtail the spread of infection. Therefore, Indiana, like the other 49 states, relies on CDC recommendations for conducting its hepatitis C intervention activities.

The focus of prevention and education activities in Indiana is multi-faceted. The burgeoning cost of HCV infection to Indiana's health care system requires the integration of HCV services into existing public health care settings such as HIV/STD programs, neighborhood health centers, and local health departments.

To help lower HCV disease incidence it is necessary to collaborate with other established partners including HIV, STD, Immunization, Department of Corrections (DOC), and Department of Mental Health. Indiana is a leader among states in beginning the HCV services integration process on a statewide basis and putting it in place at the local level.

Indiana is proceeding with this integration in the following ways:

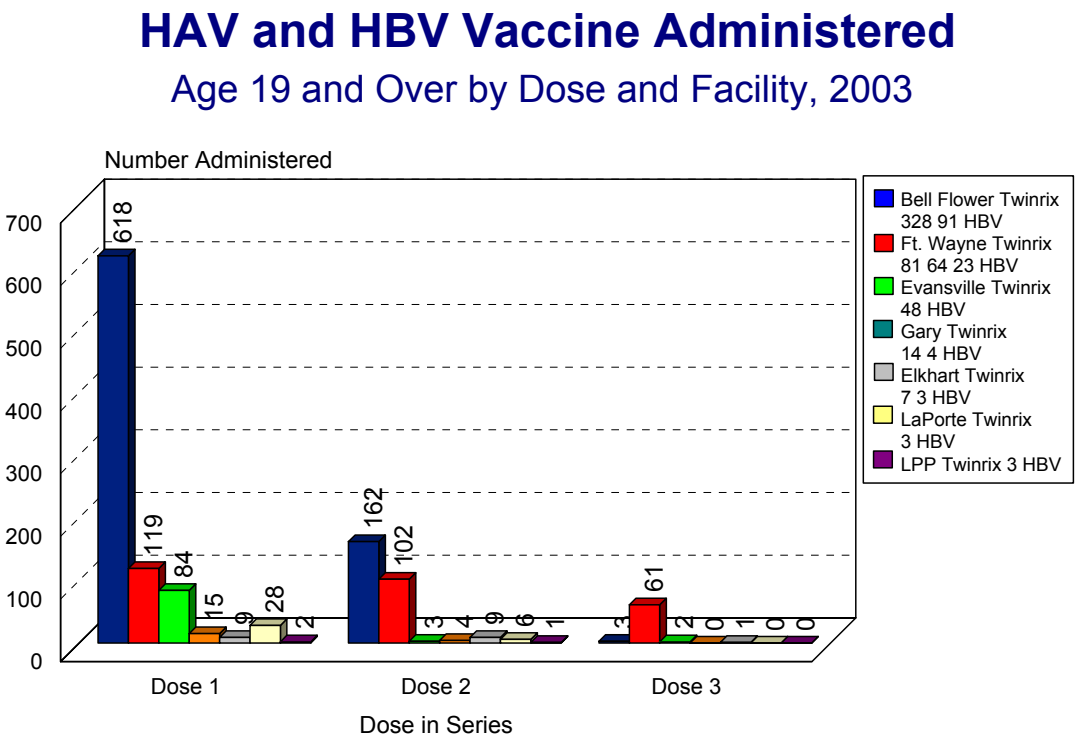
1. Guidelines for the local health departments regarding the reporting of HCV infections have been established.
2. HCV training programs for local health department nurses, disease intervention specialists (counselors for clients serviced at STD and HIV clinics), and HIV case workers are being conducted around the state as needed. These programs focus on the clinical course of infection, interpretation of test results, community resources for treatment referrals, and the integration of patient education and counseling techniques.
3. Protocols for testing at-risk clients in HIV and STD clinic settings have been developed.

4. Combination HAV and HBV vaccine (Twinrix, Glaxo Smith-Kline) for at-risk clients serviced in STD clinics is being furnished. Sites offering this service include:

   a. Allen County Health Department, Ft. Wayne
   b. Bartholomew County Health Department, Columbus
   c. Bell Flower Clinic, Indianapolis
   d. Boone County Health Department, Lebanon
   e. Community Health Services, Bloomington
   f. East Chicago Health Department, East Chicago
   g. Elkhart County Health Department, Elkhart
   h. Gary City Health Department
   i. LaPorte County Health Department, LaPorte and Michigan City
   j. Lafayette Planned Parenthood
   k. St. Joseph County Health Department, South Bend
   l. Vanderburgh County Health Department, Evansville
   m. Vigo County Health Department, Terre Haute

Figure 2 shows the number of high-risk adults that have been vaccinated in Indiana since the introduction of the vaccine program.

Figure 2.



The Indiana State Department of Health (ISDH) is working closely with the American Liver Foundation's Indiana Chapter in developing education initiatives for the citizens of Indiana. This will be done through various formats including the Liver Updates. In January 2004 a Liver Update will be conducted in Indianapolis consisting of a one-day seminar targeting the local health department and neighborhood health center health care professionals. One objective of this seminar will be to use these health care professionals to educate persons that test positive for viral hepatitis, particularly hepatitis C, about the risks associated with the disease and the course of action they can pursue to minimize liver damage. If successful, these seminars will be held in three other metropolitan areas of the state. A second objective is to address the issue of medical management and treatment of HCV infection in the uninsured or under insured population. Economic recession has led more individuals to turn to state-assisted programs for their health care needs. It is the goal of the ISDH to educate public health care providers, such as those practicing in neighborhood health centers, on the proper treatment protocols for HCV and to enable them to take care of individuals needing this assistance.

Currently, hepatitis C is among the most poorly funded public health initiatives, and one of the greatest threats to the U.S. economic health care structure. For the first time Indiana has an opportunity to eliminate HAV and HBV disease through use of vaccine. While HBV vaccine is mandated for all children entering third grade, it will take a minimum of nine years to catch up those adolescents entering school before the mandate, and at least that long to reach the high-risk adult population. To insure that the HAV/HBV vaccination program continues to reach the high-risk adult population, the viral hepatitis prevention program will be seeking necessary funding through both public and private sources.

ISDH has requested funding from the Council of State and Territorial Epidemiologists to create a written hepatitis plan to address the issues surrounding viral hepatitis as it relates to Indiana. The formulation of this plan will allow the state to partner with stakeholders affected by this issue and begin the necessary process of developing an organized approach to curtailing the epidemic.

Anyone interested in participating in this project or in hosting a HCV educational training or one-day seminar in your area, please contact:

Cheryl Pearcy
Hepatitis C Coordinator
HIV/STD Division
Indiana Department of Health
2 N. Meridian Street, 6-C
Indianapolis, IN 46204
Telephone: (317) 233-8602
cpearcy@isdh.in.state.us